

WHAT IS CLAIMED IS:

1 1. A method for preventing or treating HIV infection, said method
2 comprising:

3 a) screening a plurality of cells to identify stem cells having a beneficial gene;
4 and
5 b) transplanting said stem cells into a patient, thereby preventing or treating
6 said HIV infection.

1 2. The method of claim 1, wherein said beneficial gene is a
2 polymorphism of a gene encoding a protein expressed by immune cells.

1 3. The method of claim 1, wherein said beneficial gene is one which
2 reduces the ability of HIV to infect an immune cell.

1 4. The method of claim 1, wherein said beneficial gene is one which
2 enhances the ability of an immune cell to neutralize the virus through immune reconstitution.

1 5. The method of claim 2, wherein said protein is a ligand of a receptor
2 for HIV entry.

1 6. The method of claim 5, wherein said ligand is SDF-1 alpha and said
2 polymorphism is SDF-1 alpha 3'A.

1 7. The method of claim 5, wherein said ligand is RANTES and said
2 polymorphism is in the promoter region and increases expression levels.

1 8. The method of claim 2, wherein said protein is encoded by a gene in
2 the HLA complex.

1 9. The method of claim 8, wherein said protein encoded by a gene in the
2 HLA complex is selected from the group consisting of MHC class I molecule, MHC class II
3 molecule, TNF, and complement.

1 10. The method of claim 2, wherein said protein is a receptor or coreceptor
2 for HIV entry.

1 11. The method of claim 10, wherein said receptor for HIV entry is CD4.

1 25. The method of claim 24, wherein said beneficial gene is detected using
2 a hybridization-based assay, a sequencing assay, or a functional assay.

1 26. The method of claim 1, further comprising treatment of said stem cells
2 to express a non-native HLA protein or to inhibit expression of the native HLA protein.

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